

Claims



1. An apparatus for controlling the position of a cursor marker on a computer monitor screen and selecting the computer action such as on-screen virtual button pushing, icon positioning, and file actions such as opening or closing, comprising:
 - a headset based on the computer operator's head having a laser speckle or interference pattern generator affixed there onto projecting a laser speckle pattern generally onto the computer screen
 - a microphone with wireless transmitter connected to the headset
 - a small battery power source for the speckle pattern generating laser and wireless transmitter housed in the headset
 - a solid state optical mouse sensor affixed to the side of the computer screen and positioned such that it receives the speckle or interference pattern
 - a wireless receiver conveying the spoken instructions of the operator into the microphone port of the computer.
2. The apparatus of claim 1 where said computer is an IBM PC type with typically a Microsoft Windows XP operating system.
3. The computer of claim 2 where said computer is programmed to understand through word recognition software, spoken audible commands corresponding to computer commands normally entered on the keyboard or launched by a virtual button push with a computer mouse button.
4. The apparatus of claim 1 where said headset moves with the operator's head movement.
5. The apparatus of claim 1 where said laser speckle pattern generator is comprised of a low power solid state laser projecting a beam into a fiber optic bundle or a holographic plate to produce a speckle pattern with motion exactly correlated to the motion of the operator's head.
6. The apparatus of claim 1 where said microphone communicates the spoken commands by the computer operator to said wireless transmitter of the apparatus of claim 1.

7. The apparatus of claim 1 where said wireless transmitter communicates by electromagnetic means.
8. The apparatus of claim 1 where said wireless receiver communicates the spoken commands into the microphone port of the computer.
9. The apparatus of claim 1 where said solid state optical mouse sensor may essentially be of the type manufactured by Agilent Technologies and designated as HDNS-2000.
10. The solid state optical mouse sensor of claim 9 where said sensor is connected to supporting circuits which are in turn connected to the USB or mouse port of the computer.
11. The supporting circuits of claim 10 where said circuits are the circuits recommended by the sensor manufacture.
12. The solid state sensor of claim 10 where said sensor has the lens and aperture removed so as to permit the speckle or interference pattern to impinge on the complete sensor surface.
13. The apparatus of claim 1 where said wireless transmitter and wireless receiver may be of the Bluetooth type.
14. A method for controlling the position of a cursor marker on a computer monitor screen and selecting the computer action such as on-screen virtual button pushing, icon positioning, and file action, such as opening or closing, comprised of the following steps:
 - moving a headset with corresponding head movement
 - moving a corresponding laser produced speckle pattern across the sensor surface of a properly prepared solid state optical mouse sensor
 - controlling the motion of the computer cursor with the output of the solid state optical mouse sensor
 - speaking computer commands into a microphone attached to the headset
 - transmitting the spoken commands to a wireless receiver

converting the wireless transmitted signals into audio signal inputs to the computer

understanding the spoken command by the computer using voice recognition programming.

15. The method of claim 14 where said headset moving corresponds to desired movement of the cursor on the computer monitor screen.

16. The method of claim 14 where said computer cursor motion controlling is accomplished by the process characteristic of the solid state optical mouse sensor except that the left-right designation must be reversed electronically or in computer software.

17. The method of claim 14 where said spoken command understanding is done by conventional voice recognition software such as found in the Microsoft XP operating system.

18. An apparatus for controlling the position of a cursor marker on a computer monitor screen by using small movements of the computer operator's finger, comprising:

- a glass plate upon which the computer operator's controlling finger is placed
- a laser beam focused onto the surface of said finger through said glass plate upon which said finger rests
- a solid state optical mouse sensor with fixed position relative to the focused laser beam and said glass plate
- an interface circuit connecting to the USB or mouse port of the computer.

19. The apparatus of claim 18 where said laser beam focused onto said finger generates a speckle pattern.

20. The laser speckle pattern of claim 19 where said speckle pattern moves with corresponding movement of the operator's finger of claim 18.

21. The speckle pattern of claim 19 where said speckle pattern is made to impinge on the entire sensor surface of the solid state optical mouse sensor of claim 18.

22. The apparatus of claim 18 where said solid state optical mouse sensor may essentially be of the type manufactured by Agilent Technologies and designated HDNS-2000.
23. The solid state optical mouse sensor of claim 22 where said solid state optical mouse sensor has the lens and aperture removed so as to permit the speckle pattern to impinge on the complete sensor surface.
24. The apparatus of claim 18 where said interface circuit is of the type suggested by the manufacture of said solid state optical mouse sensor.
25. A method for controlling the position of a cursor marker on a computer monitor screen by using small movements of the computer operator's finger comprised of the following steps:
 - placing the controlling finger on a glass plate
 - projecting a focused laser beam through the glass plate onto said finger
 - projecting a scattered speckle pattern from said finger onto the sensor surface of a solid state optical mouse sensor
 - moving the finger so as to move the corresponding laser speckle pattern
 - converting said speckle pattern movement into cursor position movement on the computer monitor screen.